

## REMARKS

Claims 36-69 were pending in the application at the time the present Office Action was mailed. No claims have been amended, cancelled, or added by this response. Accordingly, claims 36-69 remain pending in the present application.

Claims 36-69 were rejected in the present Office Action. More specifically, the status of the claims in view of the present Office Action is as follows:

(A) Claims 36-53 and 58-69 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,692,703 to Murphy et al. ("Murphy") in view of the admitted prior art on page 2 and in Figures 1A-C of the application and U.S. Patent No. 2,370,801 to Klose ("Klose") or U.S. Patent No. 2,749,061 to Franz ("Franz"); and

(B) Claims 54-57 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Murphy as modified by Franz and Klose, and further in view of U.S. Patent No. 1,354,677 to Mix ("Mix").

The undersigned attorney wishes to thank the Examiner for engaging in a telephone conference on December 13, 2004 to discuss the present Office Action. During the course of the conference, the undersigned attorney and the Examiner discussed various aspects of the pending claims that are not taught or suggested by the applied references. In addition, the undersigned attorney pointed out that various aspects of the pending claims had already been found patentable by the Examiner over the applied references of Murphy, Franz, and Klose during prosecution of the parent application (i.e., Application No. 10/160,363; now U.S. Patent No. 6,726,149). The following remarks summarize the points raised during the December 13 telephone conference and reflect the agreements reached.

### A. Response to the Section 103 Rejection of Claims 36-53 and 58-69

Claims 36-53 and 58-69 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Murphy in view of the admitted prior art in the present application and Klose or Franz. To establish a *prima facie* case of obviousness, the prior art references must teach or suggest *all* the claimed features. (MPEP 706.02(j); emphasis added). As set forth in detail below, the applied references of Murphy, the prior art in the

application, Klose and Franz cannot support a Section 103 rejection of claims 36-53 and 58-69 for at least the reason that these references fail to teach or suggest *all* the claimed features.

1. Independent Claims 36 and 47 Are Directed to Derivative Wings/Aircraft that Include, *inter alia*, a Chordwise Wing Insert Portion Interposed Between a Forward Inboard Wing Portion and an Aft Inboard Wing Portion, and a Spanwise Wing Insert Portion Interposed Between an Outboard Wing Portion and the Forward and Aft Inboard Wing Portions

Independent claim 36 is directed to a derivative wing derived from a baseline wing. The baseline wing has a first outboard wing portion, a first forward inboard wing portion, and a first aft inboard wing portion. The derivative wing includes a second outboard wing portion that is sized and shaped at least generally similarly to the first outboard wing portion, a second forward inboard wing portion that is sized and shaped at least generally similarly to the first forward inboard wing portion, and a second aft inboard wing portion that is sized and shaped at least generally similarly to the first aft inboard wing portion. In addition, the derivative wing of claim 36 further includes a chordwise wing insert portion and a spanwise wing insert portion. The chordwise wing insert portion is interposed between the second forward inboard wing portion and the second aft inboard wing portion to structurally connect the second forward inboard wing portion to the second aft inboard wing portion. The spanwise wing insert portion is interposed between the second outboard wing portion and the second forward and aft inboard wing portions to structurally connect the second outboard wing portion to the second forward and aft inboard wing portions.

Independent claim 47 is directed to a derivative aircraft derived from a baseline aircraft. The baseline aircraft includes a baseline fuselage and a baseline wing extending outwardly therefrom. The baseline wing includes a first outboard wing portion, a first forward inboard wing portion, and a first aft inboard wing portion. The derivative aircraft includes a derivative fuselage and a derivative wing extending outwardly therefrom. The derivative wing includes features that are at least generally similar to corresponding features of the derivative wing of independent claim 36 discussed above.

2. The Applied References of Murphy, the Admitted Prior Art in the Application, Franz, and Klose Cannot Support a Section 103 Rejection of Independent Claims 36 and 47 for at least the Reason that These References, Either Alone or in Combination, Fail to Teach or Suggest Derivative Wings Having the Claimed Chordwise and Spanwise Wing Insert Portions

Independent claims 36 and 47 both include, *inter alia*, a derivative wing having a chordwise wing insert portion and a spanwise wing insert portion. The chordwise wing insert portion is interposed between a forward inboard wing portion and an aft inboard wing portion that were originally sized and shaped for a baseline wing. The spanwise wing insert portion is interposed between the forward and aft inboard wing portions and an outboard wing portion. Like the forward and aft inboard wing portions, the outboard wing portion was originally sized and shaped for the baseline wing.

None of the applied references teach or suggest an aircraft wing having a chordwise wing insert portion interposed between forward and aft inboard wing portions, and a spanwise wing insert portion interposed between the forward and aft inboard wing portions and an outboard wing portion. For example, as the Office Action correctly notes, Murphy is silent on the use of a chordwise wing insert portion, a spanwise wing insert portion, and deriving a second wing from a first wing. To overcome the deficiencies of Murphy, the Office Action asserts that Klose discloses the chordwise and spanwise wing insert portions of claims 36 and 47. The Office Action, however, fails to identify *where or how* Klose discloses these features. As a result, the undersigned attorney is at a loss to formulate a response to this unsupported assertion.

Nevertheless, the undersigned attorney respectfully submits that Klose does not teach or suggest *any* chordwise or spanwise wing insert portions. To the contrary, Klose discloses an aircraft wing structure in which the primary load carrying elements extend along a leading edge and are joined together within the fuselage. (Klose at column 1, lines 3-9). The unsupported assertion that Klose discloses the claimed wing insert portions appears to be based on the mere fact that any aircraft wing *could* be divided up into the outboard wing portion and the forward and aft inboard wing portions of claims 36 and 47. Even accepting this as true (and applicant expressly does not),

Klose still fails to teach or suggest the chordwise wing insert portion or the spanwise wing insert portion of claims 36 and 47.

The Office Action also cites the wing structure of Franz as purportedly teaching the missing wing insert portions. Specifically, the Office Action identifies element 16 in Figure 1 of Franz as being a spanwise wing insert, and elements 26, 28 and 30 as being chordwise wing inserts. A closer study of Franz, however, clarifies that none of the identified elements can be properly construed as the wing inserts of claims 36 and 47. One reason for this is that claims 36 and 47 require that the chordwise wing insert be attached to a forward inboard wing portion and an aft inboard wing portion *that were originally configured to be attached together in a baseline wing*. In contrast, the elements 26, 28 and 30 of Franz do not extend between a forward inboard wing portion and an aft inboard wing portion from a baseline wing. Conversely, elements 26, 28 and 30 are spanwise "structural beams" (see, for example, column 2 of Franz at line 23) that extend between two spaced-apart wing sections (i.e., supporting members 14 and 16 in Figure 1 of Franz) that were *never configured to be attached together*. The taper of the wing 84 taught by Franz unequivocally confirms that the supporting members 14 and 16 were always intended to be *spaced apart from each other*.

Another reason that Franz fails to teach the claimed invention is that elements 26, 28 and 30 of Franz do not extend between *forward* and *aft* wing portions as claims 36 and 47 require. To the contrary, as can be clearly seen from Figure 1 of Franz, these elements extend in a *spanwise* direction between *inboard* and *outboard* wing sections. For at least these reasons, none of the cited elements 26, 28 or 30 of Franz suffice as the claimed chordwise wing insert portions.

The Office Action further states "the admitted prior art on page 2 and figures 1A-C [of the present application] discloses that deriving wings are well-known in the art." (Words in brackets added). While deriving wings may be known in the art, deriving a second wing from a first wing by using *both* chordwise and spanwise wing insert portions is not known. Furthermore, the fact that derived wings may be well-known in the art still fails to teach or suggest all of the features of claims 36 and 47 as required to form a proper *prima facie* obviousness rejection. Therefore, the applied references of

Murphy, the admitted prior art, Klose and Franz cannot support a Section 103 rejection of independent claims 36 and 47 for at least the reason that these references, either alone or in combination, fail to teach or suggest a chordwise wing insert portion attached to forward and aft inboard wing portions from a baseline wing, and a spanwise wing insert portion attached to the forward and aft inboard wing portions and an outboard wing portion from the baseline wing. Accordingly, the rejections of claims 36 and 47 should be withdrawn.

Claims 37-46 depend from base claim 36, and claims 48-53 depend from base claim 47. Accordingly, the applied references cannot support a Section 103 rejection of dependent claims 37-46 and 48-53 for at least the reason that these references cannot support a Section 103 rejection of corresponding base claims 36 and 47, and for the additional features of these dependent claims. Therefore, the rejections of dependent claims 37-46 and 48-53 should be withdrawn.

3. Independent Claim 58 is Directed to a Wing Insert Having a Chordwise Portion and a Spanwise Portion

Independent claim 58 is directed to a wing insert usable with a baseline wing. The baseline wing has an outboard wing portion and an inboard wing portion. The inboard wing portion is divided into a forward inboard wing portion and an aft inboard wing portion.

The wing insert of claim 58 includes a chordwise portion and a spanwise portion. The chordwise wing insert portion is configured to be interposed between the forward inboard wing portion and the aft inboard wing portion of the baseline wing to increase an average chord of the baseline wing. The spanwise wing insert portion is configured to be positioned adjacent to the chordwise wing insert portion and interposed between the outboard wing portion and the forward and aft inboard wing portions of the baseline wing to increase a wing span of the baseline wing.

As discussed above with regard to the rejections of claims 36 and 47, none of the applied references teach or suggest a wing insert composed of a chordwise wing insert portion and a spanwise wing insert portion. Indeed, the Office Action acknowledges that Murphy fails to teach or suggest these features. Although the Office Action

suggests that Klose discloses these features, the Office Action fails to identify *where or how* Klose discloses these features. More importantly, for the reasons set forth above, the undersigned attorney respectfully submits that Klose does not disclose these features.

Turning now to Franz, the alleged chordwise inserts of Franz (i.e., elements 26, 28 and 30) do not extend between *forward and aft* wing portions as claim 58 requires. To the contrary, these elements extend in a *spanwise* direction between inboard and outboard wing sections. Finally, the admitted prior art on page 2 of the present application is only relied on by the Office Action to show that derivative wings are known. The Office Action does not suggest that this reference teaches the structural elements of claim 58. Therefore, the applied references of Murphy, the admitted prior art, Klose and Franz cannot support a Section 103 rejection of independent claim 58 for at least this reason. Therefore, the rejection should be withdrawn.

Claims 59-64 depend from base claim 58. Accordingly, the applied references cannot support a Section 103 rejection of dependent claims 59-64 for at least the reason that these references cannot support a Section 103 rejection of base claim 58, and for the additional features of the features of these dependent claims. Therefore, the rejection of dependent claims 59-64 should be withdrawn.

4. Independent Claim 65 Is Directed to a Derivative Wing Derived from a Baseline Wing, the Baseline Wing Having a Forward Inboard Wing Portion Spaced Apart from an Aft Inboard Wing Portion by a Chordwise Wing Portion, and an Outboard Wing Portion Spaced Apart from the Forward and Aft Inboard Wing Portions by a Spanwise Wing Portion

Independent claim 65 is directed to a derivative wing derived from a baseline wing having a baseline wing area. The baseline wing includes a first outboard wing portion, a first forward inboard wing portion, and a first aft inboard wing portion. The first outboard wing portion of the baseline wing is spaced apart from the first forward and aft inboard wing portions by a spanwise wing portion. The first forward inboard wing portion of the baseline wing is spaced apart from the first aft inboard wing portion by a chordwise wing portion.

The derivative wing of claim 65 has a wing area less than the baseline wing and includes a second outboard wing portion, a second forward inboard wing portion, and a second aft inboard wing portion. The second forward inboard wing portion of the derivative wing is sized and shaped at least generally similarly to the first forward inboard wing portion of the baseline wing. The second aft inboard wing portion of the derivative wing is sized and shaped at least generally similarly to the first aft inboard wing portion of the baseline wing, and is connected to the second forward inboard wing portion of the derivative wing along a spanwise connection line. The second outboard wing portion of the derivative wing is sized and shaped at least generally similarly to the first outboard wing portion of the baseline wing, and is connected to the second forward and aft inboard wing portions of the derivative wing along a chordwise connection line.

The language of claim 65 clarifies that the derivative wing is constructed by removing a chordwise wing portion and a spanwise wing portion from the baseline wing to reduce the wing area. Nowhere, however, do the applied references of Murphy, the admitted prior art, Franz or Klose teach or suggest such a derivative wing. More to the point, nowhere does the Office Action even address the specific features of claim 65. As a result, it is unclear to the undersigned attorney which aspects of the applied references the Examiner is relying on to teach the features of claim 65. In the absence of this information, the Office Action has not set forth a properly framed *prima facie* rejection of claim 65. For at least this reason, the rejection of claim 65 should be withdrawn.

The rejection of claim 65 should be withdrawn for at least one additional reason. As claim 65 sets forth, the first forward and aft inboard wing portions of the baseline wing are separated by a chordwise wing portion, and the first outboard wing portion of the baseline wing is separated from the first forward and aft inboard wing portions by a spanwise wing portion. As discussed above with regard to the rejections of independent claims 36, 47 and 58, none of the applied references teach or suggest a baseline wing having such chordwise and spanwise wing portions, much less such wing portions that can be removed from the baseline wing to produce the derivative wing of claim 65. Therefore, for at least this additional reason, the applied references of

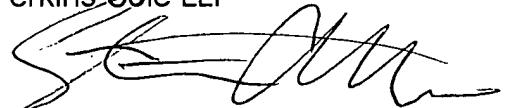
Murphy, the admitted prior art, Franz and Klose cannot support a Section 103 rejection of claim 65, and the rejection should be withdrawn.

Claims 66-69 depend from base claim 65. Accordingly, the applied references cannot support a Section 103 rejection of dependent claims 66-69 for at least the reason that these references cannot support a Section 103 rejection of corresponding base claim 65, and for the additional features of these dependent claims. Therefore, the rejections of dependent claims 66-69 should be withdrawn.

In view of the foregoing, the pending claims comply with 35 U.S.C. § 112 and are patentable over the applied references. Therefore, the applicant respectfully requests reconsideration of the application and a Notice of Allowance. If the Examiner has any questions or believes another telephone conference would expedite prosecution of this application, the Examiner is encouraged to call Steve Arnett at (206) 359-6351.

Respectfully submitted,

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